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Full List of Refereed Journal Publications (Total citations 652; H-Index 12; ResearcherID: <http://www.researcherid.com/rid/C-6860-2009>)

1. J. Gu, R. Singh, Z. Tian, W. Cao, Q. Xing, M. He, J. W. Zhang, J. Han, **H.-T. Chen**, and W. Zhang, "Terahertz superconductor metamaterial," *Applied Physics Letters*, accepted (2010).
2. **H.-T. Chen**, J. Zhou, J. F. OHara, F. Chen, A. K. Azad, and A. J. Taylor, "Antireflection coating using metamaterials and identification of its mechanism," *Physical Review Letters*, in press (2010).
3. **H.-T. Chen**, J. Zhou, J. F. OHara, and A. J. Taylor, "A numerical investigation of metamaterial antireflection coatings," *Terahertz Science and Technology* **3**, 66–73 (2010).
4. **H.-T. Chen**, J. F. OHara, and A. J. Taylor, "Active Terahertz Metamaterials," *Optics and Spectroscopy* **108**, 834–840 (2010).
5. X. G. Peralta, I. Brener, W. J. Padilla, E. W. Young, A. J. Hoffman, M. J. Cich, R. D. Averitt, M. C. Wanke, J. B. Wright, **H.-T. Chen**, J. F. O'Hara, A. J. Taylor, J. Waldman, W. D. Goodhue, J. Li, J. Renob, "External modulators for terahertz quantum cascade lasers based on electrically-driven active metamaterials," *Metamaterials* (in press, 2010), doi:10.1016/j.metmat.2010.04.005.
6. A. K. Azad, **H.-T. Chen**, S. R. Kasarla, A. J. Taylor, J. F. O'Hara, Z. Tian, X. Lu, W. Zhang, H. Lu, and A. C. Gossard, "Ultrafast optical control of terahertz surface plasmons in subwavelength hole-arrays at room temperature," *Applied Physics Letters* **95**, 011105 (2009). (Citation times: 4)
7. W. L. Chan, **H.-T. Chen**, A. J. Taylor, I. Brener, M. J. Cich, and D. M. Mittleman, "A spatial light modulator for terahertz beams," *Applied Physics Letters* **94**, 213511 (2009). (Citation times: 6)
8. A. K. Azad, **H.-T. Chen**, X. Lu, J. Gu, N. R. Weisse-Bernstein, E. Akhadov, A. J. Taylor, W. Zhang, J. F. O'Hara, "Flexible quasi-three-dimensional terahertz electric metamaterials," *Terahertz Science and Technology* **2**, 15–22 (2009).
9. **H.-T. Chen**, W. J. Padilla, M. J. Cich, A. K. Azad, R. D. Averitt, and A. J. Taylor, "A metamaterial solid-state terahertz phase modulator," *Nature Photonics* **3**, 148–151 (2009). (Citation times: 25)
10. X. G. Peralta, E. Smironova, A. K. Azad, **H.-T. Chen**, A. J. Taylor, I. Brener, and J. F. O'Hara, "Metamaterials for THz polarimetric devices," *Optics Express* **17**, 773–783 (2009). (Citation times: 7)
11. G. P. Acuna, S. F. Heucke, F. Kuchler, **H.-T. Chen**, A. J. Taylor, and R. Kersting, "Surface plasmons in terahertz metamaterials," *Optics Express* **16**, 18745–18751 (2008). (Citation times: 3)

12. **H.-T. Chen**, S. Palit, T. Tyler, C. M. Bingham, J. M. O. Zide, J. F. O'Hara, D. R. Smith, A. C. Gossard, R. D. Averitt, W. J. Padilla, N. M. Jokerst, and A. J. Taylor, "Hybrid metamaterials enable fast electrical modulation of freely propagating terahertz waves," *Applied Physics Letters* **93**, 091117 (2008). (Citation times: 13)
13. **H.-T. Chen**, H. Lu, A. K. Azad, R. D. Averitt, A. C. Gossard, S. A. Trugman, J. F. O'Hara, and A. J. Taylor, "Electronic control of extraordinary terahertz transmission through subwavelength metal hole arrays," *Optics Express* **16**, 7641–7648 (2008). (Citation times: 6)
14. **H.-T. Chen**, J. F. O'Hara, A. K. Azad, A. J. Taylor, R. D. Averitt, D. B. Shrekenhamer, and W. J. Padilla, "Experimental demonstration of frequency agile terahertz metamaterials," *Nature Photonics* **2**, 295–298 (2008). (Citation times: 64)
15. **H.-T. Chen**, W. J. Padilla, R. D. Averitt, A. C. Gossard, C. Highstrete, M. Lee, J. F. O'Hara, and A. J. Taylor, "Electromagnetic metamaterials for terahertz applications," *Terahertz Science and Technology* **1**, 42–50 (2008).
16. J. F. O'Hara, A. K. Azad, **H.-T. Chen**, A. J. Taylor, and E. Smirnova, "Effects of microstructure variations on macroscopic terahertz metafilm properties," *Active and Passive Electronic Components*, Vol. **2007**, Article ID 49691, doi: 10.1155/2007/49691 (2007).
17. **H.-T. Chen**, W. J. Padilla, J. M. O. Zide, S. R. Bank, A. C. Gossard, A. J. Taylor, and R. D. Averitt, "Ultrafast optical switching of terahertz metamaterials fabricated on ErAs/GaAs nanoisland superlattices," *Optics Letters* **32**, 1620–1622 (2007). (Citation times: 36)
18. J. F. O'Hara, E. Smirnova, **H.-T. Chen**, A. J. Taylor, R. D. Averitt, C. Highstrete, M. Lee, and W. J. Padilla, "Properties of planar electric metamaterials for novel terahertz applications," *Journal of Nanoelectronics and Optoelectronics* **2**, 90–95 (2007). (Citation times: 7)
19. **H.-T. Chen**, J. F. O'Hara, A. J. Taylor, R. D. Averitt, C. Highstrete, M. Lee, and W. J. Padilla, "Complementary planar terahertz metamaterials," *Optics Express* **15**, 1084–1095 (2007). (Citation times: 39)
20. **H.-T. Chen**, W. J. Padilla, J. M. O. Zide, A. C. Gossard, A. J. Taylor, and R. D. Averitt, "Active terahertz metamaterial devices," *Nature* **444**, 597–600 (2006). (Citation times: 180)
21. F. Buergens, R. Kersting, and **H.-T. Chen**, "Terahertz microscopy of charge carriers in semiconductors," *Applied Physics Letters* **88**, 112115 (2006). (Citation times: 15)
22. G. C. Cho, **H.-T. Chen**, S. Kraatz, N. Karpowicz, and R. Kersting, "Apertureless terahertz near-field microscopy," *Semiconductor Science and Technology* **20**, S286–S292 (2005). (Citation times: 12)
23. R. Kersting, **H.-T. Chen**, N. Karpowicz, and G. C. Cho, "Terahertz microscopy with submicrometer resolution," *Journal of Optics A: Pure and Applied Optics* **7**, S184–S189 (2005). (Citation times: 5)
24. **H.-T. Chen**, S. Kraatz, R. Kersting, and G. C. Cho, "Identification of a resonant imaging process in apertureless near-field microscopy," *Physical Review Letters* **93**, 267401 (2004). (Citation times: 24)
25. **H.-T. Chen**, G. C. Cho, and R. Kersting, "Terahertz imaging with nanometer resolution," *Applied Physics Letters* **83**, 3009–3011 (2003). (Citation times: 117)

26. W. W. Zhang, W. P. Zhang, P. B. Xie, M. Yin, **H.-T. Chen**, L. Jing, Y.-S. Zhang, L.-R. Lou, and S.-D. Xia, “Optical properties of nanocrystalline $\text{Y}_2\text{O}_3:\text{Eu}$ depending on the odd structure,” *Journal of Colloid and Interface Science* **262**, 588–593 (2003). (Citation times: 56)
27. **H. T. Chen**, R. Lian, M. Yin, L. R. Lou, W. P. Zhang, S. D. Xia, and J. C. Krupa, “Luminescence concentration quenching of $^1\text{D}_2$ state in $\text{YPO}_3:\text{Pr}^{3+}$,” *Journal of Physics: Condensed Matter* **13**, 1151–1158 (2001). (Citation times: 11)
28. **H. T. Chen**, M. Yin, R. Lian, L. R. Lou, W. P. Zheng, and S. D. Xia, “Luminescence dependence upon concentration and temperature in $\text{YPO}_3:\text{Pr}^{3+}$,” *Spectroscopy and Spectral Analysis* **21**, 151-1-54 (2001). (Citation times: 1)
29. D. F. Zhou, Y. H. Chen, C. S. Shi, Y. G. Wei, **H. T. Chen**, and M. Yin, “Energy transfer in $\text{PbWO}_4/\text{Dy}^{3+}$ luminescence,” *Journal of Alloys and Compounds* **322**, 298–301 (2001). (Citation times: 5)
30. P. B. Xie, W. P. Zhang, M. Yin, **H. T. Chen**, W. W. Zhang, L. R. Lou, and S. D. Xia, “Photoluminescence properties of surface-modified nanocrystalline $\text{ZnS}:\text{Mn}$,” *Journal of Colloid and Interface Science* **229**, 534–539 (2000). (Citation times: 16)

Patent Pending

1. “Active terahertz metamaterial devices,” International Patent Pending PCT/US2007/082023.
2. “Dynamical frequency tuning of electric and magnetic metamaterial response,” U.S. Patent Pending 11/871,642.